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UTILITY PATENT APPLICATION TRANSMITTAL

(For new Non-provisional applications under 37 CFR1.53(b))

Attorney Docket No.: UNR6053P0310US
First Named Inventor: Taft O'Quin
Express Mail Label No. EL713886225US

Box PATENT APPLICATION
Commissioner For Patents
Washington, D.C. 20231

Sir:

Transmitted herewith for filing is a new utility patent application of inventor(s): **Taft O'Quin and Leslee Bottoms** and entitled: **STATIC-DISSIPATIVE MEMBER FOR WHEELED CONVEYANCE.**

Application Elements:

1. ☒ Specification containing eight pages (preferred arrangement set forth below)
   - Descriptive Title of the Invention
   - Cross-reference to related applications (if applicable)
   - Statement regarding Federally-sponsored Research & Development (if applicable)
   - Reference to Microfiche Appendix (if applicable);
   - Background of the Invention
   - Brief Summary of the Invention
   - Brief Description of the Drawings (if filed)
   - Detailed Description
   - Claim(s)
   - Abstract of the Disclosure

2. ☒ Drawings: two Sheets of ☐ formal drawings ☒ informal drawings

3. ☒ Oath or Declaration
   a. ☒ An executed declaration or oath for the utility patent application including a power of attorney,
   b. ☐ An unexecuted declaration or oath for the utility patent application including a power of attorney;
   c. ☐ Copy from a prior application (37 CFR 1.63(d), for continuation/divisional with No. 16 completed. [Note No. 4 below.]).
      i. ☐ Signed statement attached deleting inventor(s) named in the prior application (see 37 CFR 1.63(d)(2) and 1.33(b).

4. ☐ **For CONTINUATION or DIVISIONAL Applications only:** The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 3c, is considered as being part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

5. ☐ Microfiche Computer Program (Appendix)

6. ☐ Nucleotide and/or Amino Acid Sequence submission. including:
   - ☐ Computer readable copy,
   - ☐ Paper copy (identical to computer copy),
   - ☐ Statement verifying identity of above copies.

Accompanying Application Parts:

7. ☒ Assignment Papers (cover sheet, document(s) and requisite fee).

8. ☐ 37 CFR 3.73(b) Statement (where there is an assignee)
   - ☐ Power of Attorney

9. ☐ English Translation document (if applicable)

10. ☐ Information Disclosure Statement (IDS), including PTO-1449
    - ☐ Copies of IDS Citations

11. ☐ Preliminary Amendment

12. ☐ Return Postcard for PTO Mail Room Date Stamp (should be specifically itemized).

13. ☐ Applicant claims small entity status (See 37 CFR 1.27.)

14. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed).

15. ☐ Other _____

16. ☐ **If Continuing Application**, check appropriate box and supply the requisite information below and in a preliminary amendment:
    ☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No. _____, filed _____.
    Prior application information: Examiner: _____ Group/Art Unit: _____

Fee Calculation

The filing fee has been calculated as shown below:

				Small Entity			Large Entity	
For	No. Filed	No. Allowed	No. Extra	Rate	Fee		Rate	Fee
Basic Fee					$355.00	OR		$710.00
Total Claims	11	- 20 =	0	x $9.00	$	OR	x $18.00	$0.00
Indep. Claims	2	- 3 =	0	x $40.00	$	OR	x $80.00	$0.00
Multiple Dependent Claims Present				+ $135.00	$	OR	+ $270.00	$270.00
				TOTAL	$	OR	TOTAL	$980.00

17. ☐ A check in the amount of $ 980.00 to cover the filing fee is enclosed.

18. ☐ Please charge my Deposit Account No. 04-1644 in the amount of $_____.

19. ☒ The Commissioner is authorized to charge payment of the following amounts associated with this communication or credit any overpayment to Deposit Account No. 04-1644:

- ☒ Additional filing fees under 37 CFR 1.16 or deficiencies in remittances therefor.
- ☒ Additional processing fees under 37 CFR 1.17 or deficiencies in remittances therefor.
- ☐ **ONLY if applicant has partially paid** the patent issue fee under 37 C.F.R. §1.18, then the **deficiency** shall be charged to Deposit Account No. 04-1644, and the Commissioner is authorized to so charge the Deposit Account.

Date: October 10, 2000 Attorney's Signature Allen J. Hoover

Allen J. Hoover, Reg. No. 24,103

Correspondence Address:
ROCKEY, MILNAMOW & KATZ, LTD.
Two Prudential Plaza
180 North Stetson Avenue, Suite 4700
Chicago, Illinois 60601
Telephone: (312) 616-5400
Facsimile: (312) 616-5460

CERTIFICATE OF MAILING BY EXPRESS MAIL

I hereby certify that this Utility Patent Application Transmittal, enclosed application, and any other documents referred to as enclosed herein, are being deposited in an envelope with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated below and addressed to Box PATENT APPLICATION, Commissioner for Patents, Washington, D.C. 20231.

Express Mail Label No.:	EL713886225US
Date of Deposit:	October 10, 2000
Typed/Printed Name of Person Signing:	Clarence Townsend
Signature:	Clarence Townsend

Title of the Invention

STATIC-DISSIPATIVE MEMBER FOR WHEELED CONVEYANCE

Technical Field of the Invention

This invention pertains generally to a wheeled conveyance, such as a shopping cart, a luggage cart, a utility cart, a wheel chair, a gurney, or a tricycle, of a type having a metal chassis and wheels and designed to be manually moved by pushing, pulling, or pedaling along a supporting surface. This invention pertains specifically to an improved, static-dissipative member, which grounds the metal chassis to the supporting surface.

Background of the Invention

When a wheeled conveyance of the type noted above is moved along a supporting surface, such as a floor, the wheels may isolate the wheeled chassis electrically from the supporting surface. Thus, static discharges can occur, which may be bothersome if the wheeled conveyance is a shopping cart, a luggage cart, or a utility cart, but which may be hazardous if the wheeled conveyance is a gurney bearing a patient in a medical facility.

To minimize static discharges, it is known to use conductive, carbon-filled, or metal powder-filled polymers to make surface-engaging tires of the wheels. However, it is understood that wheels having surface-engaging tires made from such polymers, when dirty after extended periods of heavy use, nonetheless may isolate the wheeled chassis of a wheeled conveyance of the type noted above from the supporting surface.

Furthermore, it is known to use a metal chain to ground the wheeled chassis of a wheeled conveyance of the type noted above from the supporting surface. The metal chain is hung from the wheeled chassis so as to drag along the supporting

surface when the wheeled conveyance is moved along the supporting surface. However, a metal chain is disfavored because a metal chain tends to damage the supporting surface, particularly if the supporting surface is a finished surface of a vinyl, wooden, or laminated floor.

Summary of the Invention

This invention is applicable to a wheeled conveyance of a type designed to be moved by pushing, pulling, or pedaling along a supporting surface. As examples, which are not limiting, the wheeled conveyance may be a shopping cart, a luggage cart, a utility cart, a wheel chair, a gurney, or a tricycle. As examples, which are not limiting, the supporting surface may be a finished surface of a vinyl, wooden, or laminated floor.

The wheeled chassis has a metal chassis and has wheels, which support the metal chassis above the supporting surface, and which may isolate the metal chassis electrically from the supporting surface. This invention is applicable whether or not a conductive, carbon-filled, or metal powder-filled polymer is used to make surface-engaging tires of the wheels. The metal chassis is grounded to the supporting surface by an elongate member, which is arranged to drag along the supporting surface when the wheeled conveyance is moved along the supporting surface.

As improved by this invention, the elongate member is made from a non-metallic, static-dissipative material, at least where the elongate member drags along the supporting surface. Preferably, the non-metallic, static-dissipative material is a polymeric material, such as polyvinyl chloride. Preferably, the elongate member is a tubular, flexible member.

In a preferred embodiment of this invention, if each wheel of the wheeled conveyance has an axle, about which such wheel is rotatable, the elongate member

is mounted mechanically and electrically to the axle of one of the wheels. This invention is applicable whether each wheel has its own axle or whether paired wheels have a common axle.

Furthermore, as contemplated by this invention, mounting of the elongate member electrically and mechanically to the axle of one of the wheels may be also applicable if the elongate member is a metal chain.

Brief Description of the Drawings

Figure 1 is a simplified, fragmentary, perspective view showing a wheeled chassis of a shopping cart, two front casters, each having a wheel, and, as provided by this invention, an elongate, flexible, non-metallic, static-dissipative, tubular member. Figure 2 is a simplified, plan view of what is shown in Figure 1.

Figure 3, on a larger scale, is a side view, partially sectioned, which shows one front caster having a wheel and having an axle for the wheel, from the shopping cart shown in Figures 1 and 2, and which shows, as an alternative to the tubular member shown in Figures 1 and 2, an elongate, flexible, non-metallic, static-dissipative, tubular member. Figure 4 is a detail taken from Figure 3, showing the tubular member, and showing a metal connector and a metal cable, as used to mount the tubular member to the axle.

Detailed Description of the Invention

As shown in Figure 1 and 2, a shopping cart 10 has a steel chassis 20, to which a steel handle (not shown) and a steel or plastic basket (not shown) are mounted fixedly in a known manner, a caster plate 30, which is made of steel and which is mounted fixedly to the steel chassis 20 in a known manner, and two front casters 40, each having a wheel 50 and an axle 60 mounting the wheel 50 rotatably and each having steel components except for the wheel 50, which has a non-

metallic, surface-engaging tire 52. The rear wheels have similar tires.

The wheels 50 and two rear wheels (not shown) support the steel chassis 20, the handle, and the basket above a supporting surface S, such as a finished surface of a vinyl, wooden, or laminated floor. As explained above, unless made from a conductive, carbon-filled, or powder metal-filled polymer, the tires 52 of the wheels 50 and the tires of the rear wheels isolate the steel chassis 20 from the supporting surface S. As explained above, even if the tires 52 of the wheels 50 and the tires of the rear wheels are made from a conductive, carbon-filled, or metal powder-filled polymer, the wheels 50 and the rear wheels, when dirty, may isolate the steel chassis 20 from the supporting surface S.

As shown in Figures 1 and 2, the steel chassis 20 is grounded to the supporting surface S by an elongate, flexible, non-metallic, static-dissipative, tubular member 90, which has a proximal end 92 and a distal end 94. The tubular member 90 is connected mechanically and electrically to the steel chassis 20, via the caster plate 30, to which the proximal end 92 of the elongate tubular 90 is connected, between the casters 40, via a rivet 96. The distal end 94 of the tubular member 90 is arranged to drag along the supporting surface S, when the shopping cart 10 is moved along the supporting surface S, whereby the steel chassis 20 is grounded to the supporting surface S.

As shown in Figures 3 and 4, as an alternative to the tubular member 90, the steel chassis 20 is grounded to the supporting surface S by an elongate, flexible, non-metallic, static-dissipative, tubular member 100. The tubular member 100 is connected mechanically and electrically to the axle 60 of one of the casters 40, by a steel connector 110, which has an eyelet 112 encompassing the axle 60 mounting the tubular member 100 and which has a crimping end 114, and by a steel cable

120, which is flexible, which has a proximal end 122 crimped to the crimping end 114 of the steel connector 110, and over which the tubular member 100 is fitted with an interference fit. A proximal end 102 of the tubular member 100 is fitted over the crimping end 114 of the steel connector 110, with an interference fit, and a distal end 104 of the tubular member 100 extends beyond a distal end 124 of the steel cable 120. The distal end 104 of the tubular member 100 is arranged to drag along the supporting surface S, when the shopping cart 10 is moved along the supporting su rface S, whereby the steel chassis 20 is grounded to the supporting surface S.

Because the tubular member 100 and the steel cable 124 are flexible, the wheel 50 having the axle 60 mounting the tubular member 100 is not damaged, if the same wheel 50 happens to roll over the tubular member 100 when the shopping cart 10 is moved.

The tubular member 90, if used, or the tubular member 100, if used, can be advantageously made from a flexible, static-dissipative, polymeric material, such as a polyvinyl chloride, which is preferred. Suitable examples of polyvinyl chlorides, which are static-dissipative, are disclosed in U.S. Patents No. 4,976,890, No. 5,066,422, and No. 5,091,452, the disclosures of which are incorporated herein by reference. A suitable material is a polyvinyl chloride available commercially from Vinylex Corp. of Carrolton, Texas, under the trade designation SF85 Flex PVC with UV and fungus inhibitors.

The tubular member 90, if used, or the tubular member 100, if used, does not tend to damage the supporting surface, particularly if the supporting surface is a finished surface of a vinyl, wooden, or laminated floor. Rather that a tubular member 90, 100, a flexible strap of a similar material can be alternatively used.

Claims

1. A wheeled conveyance of a type designed to be moved by pushing, pulling, or pedaling along a supporting surface, the wheeled conveyance having a metal chassis and having wheels, which support the metal chassis above the supporting surface and which may isolate the metal chassis electrically from the supporting surface, the metal chassis being grounded to the supporting surface by an elongate member arranged to drag along the supporting surface when the wheeled conveyance is moved along the supporting surface, the elongate member being made from a non-metallic, static-dissipative material, at least where the elongate member drags along the supporting surface.

2. The wheeled conveyance of claim 1 wherein the non-metallic, static-dissipative material is polymeric.

3. The wheeled conveyance of claim 2 wherein the non-metallic, static-dissipative material is a polyvinyl chloride.

4. The wheeled conveyance of claim 3 wherein the elongate member is flexible.

5. The wheeled conveyance of claim 4 wherein the elongate member is tubular.

6. The wheeled conveyance of claim 1, 2, 3, 4, or 5 wherein each wheel has an axle, on which said wheel is rotatable, and wherein the elongate member is mounted mechanically and electrically to the axle of one of the wheels.

7. A wheeled conveyance of a type designed to be manually moved, by pushing or pulling, along a supporting surface, the wheeled conveyance having a metal chassis and having wheels, which support the metal chassis above the supporting surface and which isolate the metal chassis electrically from the

supporting surface, the metal chassis being grounded to the supporting surface by an elongate member arranged to drag along the supporting surface when the wheeled conveyance is moved along the supporting surface, the elongate member being static-dissipative, each wheel having an axle, on which said wheel is rotatable, and the elongate member being mounted mechanically and electrically to the axle of one of the wheels.

Abstract

A wheeled conveyance, such as a shopping cart, a luggage cart, a utility cart, a wheel chair, a gurney, or a tricycle has a metal chassis and wheels, which support the metal chassis above a supporting surface, such as a floor surface, and which may isolate the metal chassis electrically from the supporting surface. The metal chassis is grounded to the supporting surface by an elongate, flexible member, which is made from a non-metallic, static-dissipative material, such as a polyvinyl chloride, and which is arranged to drag along the supporting surface when the wheeled conveyance is moved along the supporting surface. Each wheel has an axle, on which such wheel is rotatable, and the elongate member can be mechanically and electrically connected to the axle of one of the wheels.

FIG. 1

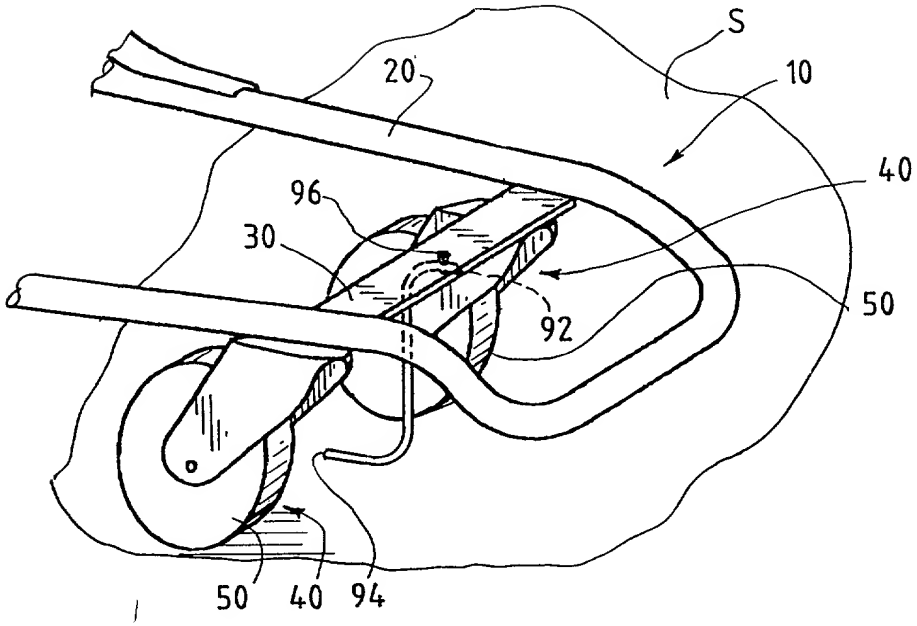


FIG. 2

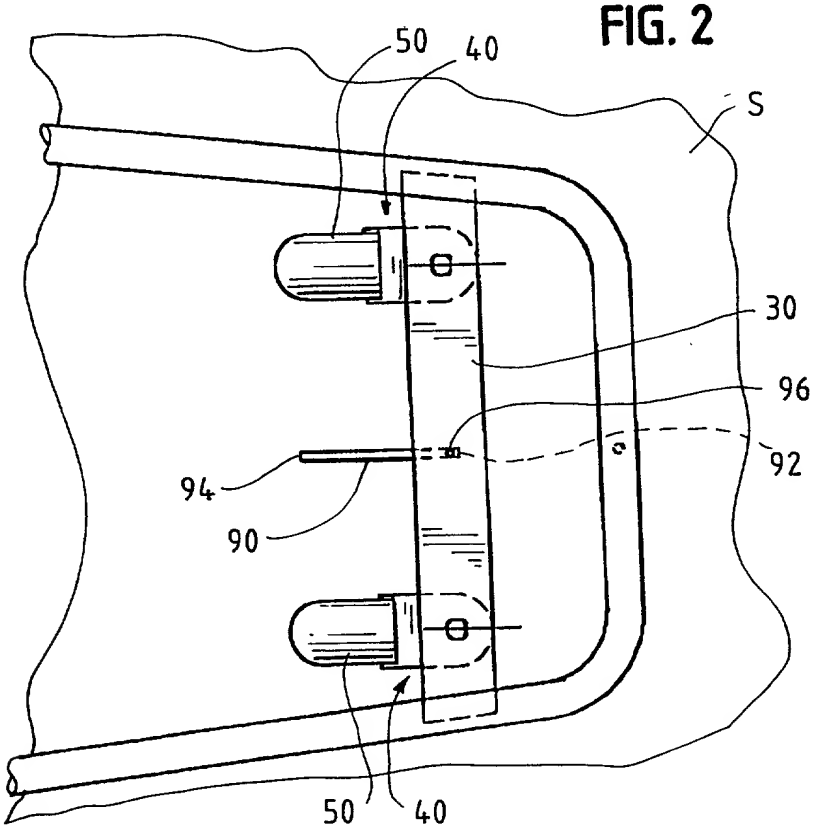


FIG. 3

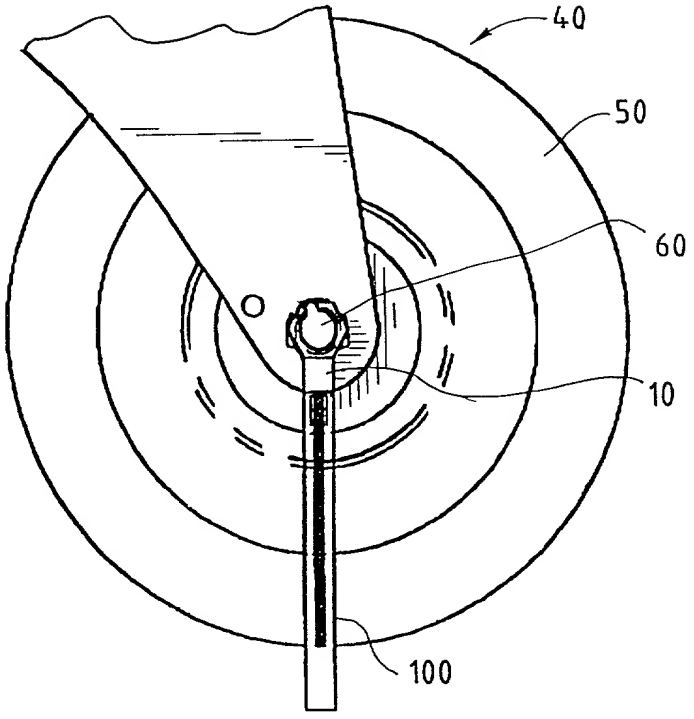
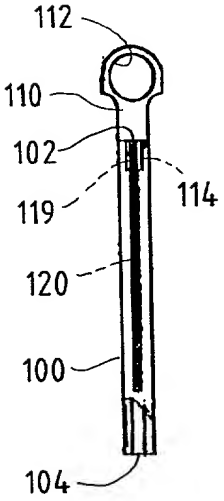


FIG. 4



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DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)		Attorney Docket No.: UNR6053P0310US
		First Named Inventor: Taft O'Quin
		COMPLETE IF KNOWN
☒ Declaration Submitted With Initial Filing	☐ Declaration Submitted After Initial Filing (surcharge (37 CFR 1.16(a)) required	Application Number:
		Filing Date:
		Group Art Unit:
		Examiner Name:

As a below-named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first, and sole inventor (if only one name is listed) or an original, first, and joint inventor (if plural names are listed) of the subject matter which is claimed and for which a patent is sought on the invention entitled: **STATIC-DISSIPATIVE MEMBER FOR WHEELED CONVEYANCE**, the specification of which:

☒ is attached hereto; or

☐ was filed on _____
as Application Serial No. _____
and was amended on _____(if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose all information to the Patent and Trademark Office known to me to be material to patentability of this application, as defined in 37 CFR. 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT International application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Numbers	Country	Foreign Filing Date	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet (PTO/SB/02B) attached hereto.

I hereby claim the benefit under 35 U.S.C. 119 (e) of any United States application(s) listed below.

Application Number(s)	Filing Date	☐ Additional provisional application numbers are listed on a supplemental priority data sheet (PTO/SB/02B) attached hereto.

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT International application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

U.S. Parent Application or PCT Parent Number	Parent Filing Date	Parent Patent Number (if applicable)

☐ Additional U.S. or PCT International application numbers are listed on a supplemental priority data sheet (PTO/SB/02B) attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

Lawrence J. Chapa	Reg. No. 39,135	Paul M. Odell	Reg. No. 28,332
Randall T. Erickson	Reg. No. 33,872	Robert B. Polit	Reg. No. 33,993
Stephen D. Geimer	Reg. No. 28,846	Elaine M. Ramesh	Reg. No. 43,032
Allen J. Hoover	Reg. No. 24,103	Keith V. Rockey	Reg. No. 24,713
Martin L. Katz	Reg. No. 25,011	John F. Rollins	Reg. No. 38,013
Kathleen A. Lyons	Reg. No. 31,852	Thomas I. Ross	Reg. No. 29,275
John P. Milnamow	Reg. No. 20,635	Joel E. Siegel	Reg. No. 25,440
Lisa V. Mueller	Reg. No. 38,978	Paul M. Vargo	Reg. No. 29,116

whose mailing address for this application is: ROCKEY, MILNAMOW & KATZ, LTD.
Two Prudential Plaza - Suite 4700
180 North Stetson Avenue
Chicago, Illinois 60601
Telephone: (312) 616-5400
Facsimile: (312) 616-5460

I hereby declare that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor:	Taft O'Quin
Citizenship:	U.S.
Residence:	300 C Street NE Inola, Oklahoma 74036
Post Office Address *(if different)*:	same as above
Signature: [signature]	Date: 10/5/00

Name of Additional Inventor, if any:	Leslee Bottoms
Citizenship:	U.S.
Residence:	1005 S.W. 9th Street Wagoner, Oklahoma 74467-6817
Post Office Address *(if different)*:	same as above
Signature: [signature]	Date: 10/5/00